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ABSTRACT

Why students drop out of school and how to prevent them from doing so has been a recurring theme in research literature. Many factors influence the decision to drop out, including student access to counseling. This question of access to counseling is explored in this paper so as to identify variables that can be manipulated through policy decisions to reduce the dropout rate. Using the National Education Longitudinal Study, the dropout behavior between middle school (N=17,424) and high school (N=16,749) students is compared. The results show that eighth graders living in a single-parent family have more access to counseling, as did sophomores living with a guardian or other type of family, than do other students. The students' school behavior and attitudes are significant determinants of access to counseling. Family background also influences dropout behavior, but over time, the negative impact of living in a single-parent family diminishes. Findings also indicate wide differences among ethnic groups. Whereas access to academic counseling is positive for Hispanics and Whites, such access has a negative impact for Blacks on the decision to dropout throughout middle school and high school. The results indicate that providing more academic counseling will reduce Hispanics' and Whites' dropout rates but more research is needed to decipher the dynamics between counselors and Black students. (RJM)

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# EFFECTS OF ACCESS TO COUNSELING AND FAMILY BACKGROUND ON AT-RISK STUDENTS

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**ABSTRACT**

This paper focuses on how access to academic counseling affects the decision to dropout. Using the National Education Longitudinal Study, this study compares dropout behavior between middle school and high school students. The results show that family background is a significant determinant of dropout behavior. However, over time the negative impact of living in a single parent family diminishes. Unlike family background, the effect of having access to an academic counselor increases over time. There exist wide differences between ethnic groups. Access to academic counseling is beneficial for Hispanics and Whites. Access to academic counseling has negative consequences for Blacks' educational attainment. The results indicate that providing more academic counseling will reduce the dropout rate among Hispanics and Whites. However, in order to understand why academic counseling is not beneficial for Blacks, more research is needed to decipher the dynamics of the relationship between counselors and Black students.

The issue of why students dropout and how to solve this problem has been a recurring theme in the literature. After scores of research and countless dropout prevention programs, a substantial proportion of students continue to dropout of school. Recent estimates show that six percent of students leave school before completing the tenth grade, and ten percent of high school students do not complete the twelfth grade. Particularly striking is that less progress has been in reducing the dropout rate among Blacks and Hispanics. The dropout rate among Blacks and Hispanics are more than twice the overall dropout rate (see Table 1).

Parental influence notwithstanding, the school may have an important role in assisting students make appropriate choices and decisions about training and education (Commission, 1986). To that end, guidance counseling is seen as one of the main school resources that has a direct impact on students' educational outcomes (Commission, 1986; Epstein, 1992; Lee and Ekstrom, 1987; Powell et al., 1985). However, analyses of counselors' impact on the decision to remain in school indicate inconsistent effects across ethnic groups.

Walz (1987) assesses the counselor's role in certain school activities and practices such as promotion of school attendance, encouragement of parental participation, and help for each student to establish career goals, for example. In his qualitative assessment, Walz finds that the counselor's role yields positive results in terms of student retention. Using aggregate school data, Scales (1969) find that programs based on counseling and teaching factors significantly reduce the school dropout rate, particularly among schools with a high percentage of Hispanic and low income students.

Lee and Ekstrom (1987) find that students with access to counseling are more likely to be in academic track. Moreover, students with good school performance tend to have more access to academic counseling to facilitate their educational goals and selection of coursework.

Whereas economically disadvantaged students, and minority students are less likely to have access to counseling. Given that students with low grades, minority students, and students from low socioeconomic status are more likely to dropout, the authors' analysis suggests that the impact of counseling may differ across ethnic groups. Moreover, previous studies concluded that counseling may hinder educational progress for certain groups, as well as perpetuate socioeconomic distinctions (Cicourel and Kitsuse, 1963; Powell et al., 1985).

The current study analyzes how academic counseling, as a school resource, affects the decision to dropout across different ethnic groups. The analysis also examines whether the impact of counseling differs between students who dropout early in their school career compared to those who dropout at more advanced levels of schooling. The current analysis simultaneously accounts for family background, personal characteristics, as well as school factors. The study distinguishes among three types of school factors: access to counseling as a measure of school resource allocation, student school behavior, and academic achievement. The analysis uses longitudinal data from the National Education Longitudinal Study to test a model of dropping out of school. The longitudinal data allows for a comparison among students who dropout before completing the tenth grade, hereafter middle school, and students who dropout before completing the twelfth grade.

## RELATED LITERATURE

*Family and Personal Characteristics*

Extensive research has been conducted on the causes of dropping out of school. A thorough review of the dropout literature is beyond the scope of this paper. However, several findings relevant to the current study should be highlighted. Previous studies identify several factors that affect the probability of dropping out of school. Hispanic and White males are more

likely to dropout than females; Black females are more likely to dropout than Black males (Ekstrom et al., 1986). Moreover, females are more likely to dropout after controlling for differences in attitudes, behavior, and grades (Rumberger, 1995).

Findings on the effects of family background have been consistent over the years. Studies find that students from single parent family, and students from low socioeconomic status are more likely to dropout (Barrington and Hendricks, 1989; Rumberger, 1995; McDill et al., 1985; Whelage and Rutter, 1986). There is also evidence that family size increases the likelihood of dropping out (Powell and Steelman, 1993). Though family background is a strong predictor of who is most likely to dropout, there are racial and ethnic differences. Among minority students, large families and socioeconomic status do not significantly increase the likelihood of dropping out (Rumberger, 1991 and 1995).

Some studies also find that parental behavior and attitude may have an impact on the decision to stay in school. Parents with high expectation for their children, and parents who remain involved in the educational process reduce the likelihood that their children will dropout (Astone and McLanahan, 1991; Rumberger, 1995). Again the effects of parental involvement and expectation vary by ethnicity and socioeconomic status (Astone and McLanahan, 1991; Rumberger, 1995).

*School Behavior and Academic Performance*

Unlike family characteristics, school related factors are tangible variables that can be manipulated through policy decisions. Thus, recent research has given more attention to school factors. There are two sets of school factors in the current literature. One set of factors focuses on student school behavior and academic performance. Research shows a host of school behavioral factors that tend to increase the risk of dropping out of school. For example, the

incidence of dropping out increases among students who have poor grades, students who are held back, and among students with excessive absences or latenesses (Barrington and Hendricks, 1989; Cairns et al., 1989; Ekstrom et al., 1986; McDill et al., 1985; Roderick, 1993; Rumberger, 1995; Whelage and Rutter, 1986). Also aggressive and delinquent behavior, particularly among males, increases the risk of dropping out (Cairns et al., 1989; Ensminger and Slusarcick, 1992; McDill et al., 1985).

Although these empirical findings seem to be quite consistent throughout the literature, conceptual models to explain why these behavioral and performance factors influence the dropout process is scarce (Rumberger, 1995). Some qualitative models suggest that both labor market forces and the school environment are important factors in the process. Many students leave school because they feel a weakening connection between a high school diploma and the guarantee of a good job (Apple, 1989; Bickel, 1989; Epstein, 1992; Fine, 1984). Other studies find that the most important within-school factor that causes students to dropout is a lack of communication with parents of low-income students (Epstein, 1992).

Indeed it is now widely recognized that they are many aspects that interact with the dropout process. In a sense the dropout problem is not singular. Rather, it is a complex process that involves individual characteristics as well as institutional characteristics of the school (Mann, 1987; Natriello et al., 1986; Whelage and Rutter, 1986; Toles et al., 1986).

*School Organization and Structural Characteristics*

The other set of school factors focuses on the organizational and structural characteristics of the school. The effects of the school's institutional characteristics on the decision to dropout are the least explore research area. Some studies focus on school-level differences (Bryk and

Thum, 1989; Rumberger, 1995). While very few focus on the students' experience within the school, and how this experience may impact the decision to dropout

One resource within the school that may affect schooling experience is academic counseling. Lee and Ekstrom (1987) find an unequal distribution of guidance counseling services among public high school students. The authors note that students in most need of guidance counseling service are least likely to receive it in school. Students from families of low socioeconomic status, minority students, students of low academic ability are less likely to have access to guidance counseling for planning their course of study (Lee and Ekstrom, 1987). It is important to note that the students less likely to receive counseling service, as identified by Lee and Ekstrom, are the ones most likely to dropout.

Scales (1969) conducted a study of California public schools to determine which programs within the school setting keep students from dropping out of school. He finds that programs based on counseling and teaching factors significantly reduced the school dropout rate. However, Scales' analysis of counseling and teaching factors was based on aggregate school. Therefore, the effects of counseling on the decision to dropout from the student's perspective cannot be fully explored. Such a perspective will give educators and policy makers tangible factors that can be manipulated in reforming and improving the efficiency of the school system, and in reducing the dropout rate.

## HYPOTHESES

Bidwell and Kasarda (1980) hypothesized that the social organizational structure of the school "affect schooling through policies and administrative acts that influence students' access to or use of resources for schooling (p. 417)." Therefore, the allocation of school resources has an impact on students' educational outcomes. It has been observed that as students move from

middle school through high school, the organization of the school day is more complex and the curriculum is more departmentalized like a "shopping mall" (Powell et al., 1985) Continuing in the spirit of a mall, a directory of the different "shops" is a valuable resource for "customers" to make appropriate choices. In the authors' words, the most valuable resource in the school may be the guidance counselor who assists students with educational and career choices (Powell et al., 1985).

Does the counselor play a pivotal role in reducing the dropout rate? Are the effects similar across ethnic groups? Do the effects change over time? After extensive dialogue with students, the Commission on Precollege Guidance Counseling (1986) reports that students of low socioeconomic status tend to rely more on their counselor or teacher for information and support about academic programs. Although this may be true, Powell et al. (1985) observe that counseling is more like a consumer good available for "purchase" or "rejection" by students. By leaving the choice to the students, the schools perpetuate the socioeconomic distinction that it is supposed to eliminate.

This leads to the following hypotheses:

Hypothesis 1: The effect of counseling on dropping out behavior is net of any impact of family and personal characteristics. Students who obtain counseling will be less likely to dropout.

Education is a transitory process whereby the individual decides to either continue or to dropout. Mare (1980) showed that factors affecting decision in the early schooling process are different from factors that affect it later. Hence,

Hypothesis 2: The effects of family and personal characteristics decrease while the effects of schooling increase for students who dropout at more advance levels of schooling.

Hypothesis 3: Minority students have less access to academic counseling resource, and will be more likely to dropout.

## RESEARCH DESIGN

*Data and Sample*

The data for this study is taken from the National Education Longitudinal Study (NELS). NELS is a survey sponsored by the National Center for Education Statistics, U.S. Department of Education. The first survey, taken in 1988, used a two-stage probability sample with schools as the primary sampling unit and students within schools as the secondary sampling unit. Since 1988 there has been three follow-up surveys. Each follow-up survey occurs at two-year intervals.

The analysis draws data from the base year, first follow-up, and second follow-up surveys to create two samples. The first analysis uses a sample of 17, 424 eighth graders surveyed in both 1988 and 1990 to evaluate the effects of access to counseling on middle school students' dropout behavior. The second analysis uses a sample of 16,749 sophomores surveyed in 1990, and again in 1992 when they were seniors. The second analysis evaluates the impact of counseling on the decision not to complete high school.

*Variables and Statistical Methods*

The outcome variable is a dichotomous variable reflecting the decision to either dropout or to stay in school. A dropout is anyone not enrolled in formal school at the time of the survey.[1] This inclusive definition is chosen because research shows that general equivalency diploma (GED) may not yield similar economic benefits as a formal high school diploma (Cameron and Heckman, 1993; Cao et al., 1996). The dropout variable is set to one if the student stays in school and zero otherwise.

The analysis controls for race, gender, family and personal characteristics of the student. Dummy variables are used to identify Asian, Black, Hispanic, and Native American students. The omitted category represents White students. Gender is set to one if the student is a female and zero otherwise. Five dummy variables represent family structure. These variables indicate whether the student lives in a single parent family, in a stepparent family, or whether the student lives in some other family arrangement, for example with guardians or foster parents. The omitted category represents students who live with both parents.

Other family background indicators include socioeconomic status, and whether another language besides English is spoken in the home. The number of siblings living at home is also used to describe family structure. The analysis also controls for parents' educational expectation. This is a dummy variable set equal to one if the parent expects the child to obtain less than a high school diploma, but equal to zero otherwise. An analogous definition is used to measure the student's own educational expectation.

The analysis also includes several measures of school behavior and academic performance. One variable indicates the extent to which the student cuts or skips class during the week. This is used to reflect the student's attitude about school. This variable is set to one if the student reports cutting or skipping class at least once a week or daily; it is set to zero otherwise. Another dummy variable indicates whether the student has ever been held back a grade. Other variables include student self-reported grade as well as standardized composite test scores in reading and math.

Lastly, the analysis incorporates student access to counseling. Academic counseling is not the only duty of the guidance counselor. A guidance counselor responsibility may include monitoring attendance, assisting students with college application, psychological counseling, or

disciplinary duties. Access to academic counseling, rather than the other duties, is the focal point because all students must make course choices; whereas only few students may require disciplinary or psychological counseling (Lee and Ekstrom, 1987).

In this paper, access translates to the student self-report of whether or not a counselor assisted with the selection of courses[2]. Note, however, that this definition and the data cannot measure the substance of the advice received by students. It is equally important to note that some research finds that counselors may either facilitate or hinder education progress (Cicourel and Kitsuse, 1963; Lee and Ekstrom, 1987). Moreover, if the outreach is from the student to the counselor, as suggested by Powell et al. (1985), then our measure is at best only a proxy of the "true" measure of access to counseling. The possibility for not observing the "true" measure of access exists if students are not aware of academic counseling services in their school. Another possibility is that access may be restricted by administrative procedures that may discourage certain students from seeking academic advice. Neither of these possibilities can be decipher from the available data.

Access to counseling reflects whether the student receives counseling in selecting courses at their current school at the time of the survey. The focus is on the selection of mathematics courses. Each survey asked students to indicate how they selected their mathematics courses. Therefore by focusing on the selection of mathematics courses a comparison of the impact of counseling as the student progresses through middle school and high school can be made.

In many districts teachers also provide counseling services (Commission, 1986). Thus, if there is a missing value for counselor but a non-missing value for teacher, then the non-missing value is used to measure access to counseling. If the answer that applies to counselor and teacher

is missing, then access to counseling is coded as a missing value. Appendix A shows the mean and standard deviation for all the variables used in the analysis.

The NELS survey uses a stratified cluster sampling design. The complex sample design implies that the standard error of the estimated regression coefficients can not be calculated using the formula under the assumption of simple random sample (NCES, 1994). Therefore, the statistical model is estimated using weighted probit regression[3]. This paper estimates two separate probit regressions, one for each of the two samples. The first analysis evaluates dropout behavior between 1988 and 1990 -- the eighth grade cohort in 1990. The second analysis examines dropout behavior between 1990 and 1992. This is the sophomore cohort in 1992.

## RESULTS

Table 1 shows that the dropout rate among high school students is higher than the dropout rate among middle school students. However, at any level of schooling Blacks and Hispanics have a higher dropout rate than Whites. In the eighth grade there is a higher percentage of students reporting contact with a counselor. More than 35 percent of eighth graders, but fewer than 8 percent of sophomores report having access to a counselor.

The percentage of Blacks and Hispanics reporting access to counseling is not significantly different from that reported by Whites at any level of schooling. Approximately 37 percent of Black and Hispanic eighth graders report access to a counselor, compared to 36 percent of White eighth graders. Among the sophomore cohort, 4 percent of Black and White students, and 3 percent of Hispanic students report having access to a counselor.

The similarity among the three groups dissipates when analyzing the percentage of dropouts reporting access to a counselor. Among dropouts in the eighth grade, approximately 13 percent of Black students, 9 percent of Hispanic students, but only 4 percent of White students

reported access to a counselor. A much lower percentage (7 percent) of Black students whom dropout reported no access to a counselor. The trend is somewhat reversed among the sophomore cohort. About 13 percent of Black students that dropout had no access to counseling; but 10 percent of dropouts reported having access to a counselor. Although the estimates are lower, the trend is similar among White sophomores (see Table 1).

The high percentage of sophomore dropout without access to a counselor may simply reflect the lower incidence of contact between students and counselors. In other words, if the majority of sophomores do not have any contact with a counselor, there is a greater probability that most of the dropouts will not report having access to a counselor. Conversely, the high percentage of dropouts in the eighth grade reporting access to a counselor may be reflective of the fact that most of the students do have contact with a counselor. Hence, causality can not be inferred from these results.

*Access to Counseling and Family Structure*

What are the characteristics of students with access to counseling? Are the factors determining access to counseling similar at all levels of schooling and across ethnic groups? In order to address these questions, the variable measuring access to counseling is treated as a function of family structure, and school behavior and attitudes.

Table 2 shows that very few factors help explain which students have access to counseling. There are some exceptions. For the eighth grade cohort, White students living with a single parent have significantly more access to counseling. White students with high incidence of cutting or skipping class have less access to counseling. Blacks with high test scores in reading and math have significantly more access to counseling. On the other hand, Hispanics with high

grades are more likely to have access to counseling. However high incidence of cutting or skipping class does not significantly impact Blacks and Hispanics access to counseling.

Black and Hispanic sophomores living in other type of family arrangement report significantly more access to counseling. White students who report low parental expectation have significantly less access to counseling. None of the family structure variables significantly determine White students' access to counseling. Given family structure and school behavior and attitudes, high test scores in reading and math have a significant positive impact on Hispanic and White students' access to counseling. However, high test scores do not have a significant impact on Blacks' access to counseling. If only high academic achievers receive help with academic plans, then the results confirm that Hispanic and White high school students are the main beneficiary of this scarce school resource.

*Dropping Out, Access to Counseling and Family Structure*

What is the effect of access to counseling on dropout behavior? Do the effects differ for students at more advanced level of schooling? In order to evaluate these questions, a model for the eighth grade and the sophomore cohort is estimated. Table 3 reports the effects of family structure, school behavior and attitudes, and access to counseling on the decision to dropout. According to the estimates, growing up in a single parent family or a stepparent family has negative consequences for educational attainment. Students who do not live with both parents have a higher incidence of dropping out than those who do live with both parents.

The results also show that the effect of access to counseling is not the same at all levels of schooling. Among eighth graders the effect of access to academic counseling is negligible and statistically insignificant. For the sophomore cohort, access to academic counseling has a significant positive effect on the decision to stay in school.

In order to determine whether the effects of family and access to counseling vary at different levels of schooling, compare the columns of Table 3. The results show that the negative impact of living in a single parent family is significantly lower at later stages of schooling. The diminishing effect of low parental expectation and having been held back a grade is striking. On the other hand, the negative impact of living with a guardian or other type of family increases. Also, the negative consequences of low student expectation increase.

The change in the impact of these coefficients occurs regardless of whether or not access to counseling is included as a control variable (column 1 versus column 2, column 3 versus column 4). Unlike family background and personal characteristics, the effects of schooling increase at higher levels of schooling. Among the sophomore cohort, access to counseling has a significant positive impact on the decision to remain in school. The coefficient of access to counseling increases from zero for the eighth grade cohort to 0.20 for the sophomore cohort.

Overall the results are consistent with other empirical studies showing that family and personal characteristics are important determinants of dropout behavior. However, over time the negative impact of living in a single parent family diminishes. The results also confirm that students' experience in the school, as measured by having access to a counselor, becomes more important at higher levels of schooling.

*Estimates for Ethnic Groups*

Previous studies suggest that factors associated with dropout behavior may not apply to all ethnic groups (Rumberger, 1995). There is also anecdotal evidence suggesting that school factors may be as important as family factors in determining minority students educational success (Commission, 1986). To test for differences among ethnic groups, separate regressions

are estimated for Blacks, Hispanics, and Whites. Table 4 and Table 5 present the coefficient estimates of these regression analyses.

With respect to Table 4, factors that have a significant impact on dropping out are somewhat similar among the three groups, especially among Black and White students. Growing up in a single parent family, a stepparent family, or having been held back a grade are significant determinants of dropout behavior among Black, Hispanic, and White eighth graders. Particularly, having been held back has a strong negative impact on the decision to dropout for the three groups considered here. As in the previous analysis, eighth graders' access to counseling does not have a significant impact on dropout behavior. It is worth noting, however, that the impact of access to counseling is positive for Hispanics and Whites, but negative for Blacks.

Table 5 shows the results for the sophomore cohort. Living in a single parent family does not have a significant impact for Blacks and Hispanics dropout behavior. However, for White students being in a single parent family has a significant negative impact on dropping out of school. Also living in a stepparent family or other type of family arrangement has negative consequences for the educational attainment of Blacks and Whites, but not for Hispanics. On the other hand, Hispanics and Whites with low expectation have significantly lower educational attainment. A consistent finding is the effect of having been held back which is strongly correlated with dropping out across the different groups in both middle school and high school.

The hypothesis that school factors are as significant as family factors for minority students is not supported by the evidence. Although access to counseling for Black students is not statistically significant impact, it is troublesome that the coefficient is negative.. For White students, access to a counselor significantly increases the tendency to remain in school over time. Among Hispanics, access to counseling has a positive impact on educational attainment;

but it is not statistically significant. These results imply that the content of the advice, and the relationship between student and counselor is as important as having access to this resource.

Table 4 and Table 5 show that the negative impact of living in a single parent family, or a stepparent family decrease over time. Particularly among Blacks and Hispanics, living in a single parent family has a negligible effect on these students' dropout behavior in high school. Also low parental expectation does not significantly impact the decision to remain in school. For White students, changes in the effects of family structure are not as dramatic. However, for White students the negative consequences of having been held back a grade, and low parental expectation are significantly lower in high school than in middle school.

*Eighth Grade Cohort in 1992*

The previous section compared results from two cross-sectional samples. These results may not be due to time; rather, the change in the coefficients may arise because different individuals are observed in each sample. In order to test for this possibility, a regression using the eighth grade cohort in 1992 is estimated. The sample of the eighth grade cohort in 1992 includes a longitudinal sample of students interviewed in 1988, 1990, and 1992. In both 1988 and 1990 these students were enrolled in school. However, approximately fifteen percent of these students dropout or were enrolled in alternative programs at the time of the 1992 survey.

Table 6 shows the regression analysis for this cohort. The results are similar to those discussed with regard to the two cross-sectional samples. Access to counseling has a positive impact on educational attainment at higher level of schooling. Moreover, the negative consequences of growing up in a single parent or stepparent family diminish over time. Hence, the results described in the previous section are robust. Factors affecting early schooling process

are different from factors that affect it later; especially, factors relating to the distribution of school resource allocation, as for example access to academic counseling.

## SUMMARY AND IMPLICATIONS

The main objective of this paper is to identify variables that can be manipulated through policy decisions to reduce the dropout rate. In order to achieve this objective, the paper focuses on the effects of allocation of and access to resources within the school. In the analysis, access to academic counseling represents students' access to and use of school resources. The main hypothesis is that access to school resources affects the decision to remain in school. Other factors such as family structure, school behavior, and academic achievement are also considered in the analysis.

First the paper addresses the question of whether family structure, and school behavior determines access to counseling. The results show that eighth graders living in a single parent family significantly have more access to counseling. Among sophomores, living with a guardian or other type of family have a positive impact on having access to counseling. The student's school behavior and attitudes are significant determinants of access to counseling. Hispanic and White students with high test scores in reading and math have significantly more access to counseling than Blacks. Clearly, Hispanics and Whites with excellent academic achievement seem to benefit more in terms of scarce resource allocation, especially in high school.

The paper then examines the effects of family structure, and access to counseling on dropout behavior. The evidence shows that students who do not live with both parents have a higher incidence of dropping out than those living with both parents. However, over time the negative consequence of living in a single parent family diminishes. Particularly, living in a single parent family does not have any significant impact for Blacks and Hispanics dropout

behavior in high school. However, for White students the negative consequences of living in a single parent family remain a significant factor over time.

The results also show that school's resource allocation, as measured by students' access to academic counseling, is an important factor in the education decision process. Access to counseling has a significant positive impact at advanced levels of schooling. Counseling, however, is a beneficial resource for White students in high school. To a lesser extent, it is also beneficial to Hispanic high school students. Among Blacks, access to counseling has a negative impact on the decision to dropout throughout middle school and high school.

Considering these results, providing more access to academic counseling will reduce the dropout rate among Hispanic and White students, especially during the transition from middle school to high school. At this juncture no such recommendation can be made for Black students. A closer examination of the relationship between counselors and Black students would help to understand why access to this resource is not beneficial for these students.

## NOTES

[1] NCES created variables to indicate each student enrollment status. For the eighth grade cohort, dropout is set to one if the variable F1DOSTAT is equal to value of 4 or 5. For the sophomore cohort, dropout is set to one if the variable F2DOSTAT is equal to a value of 3 (these are students enrolled in alternative programs) or to a value of 5. For more information the reader is referred to the NELS Users' Manual.

[2] This definition is similar to the one used by Lee and Ekstrom (1987).

[3] Statistics that take account of the complex sampling design of the NELS data will yield higher standard errors than those calculated under simple random sampling. Hence, standard errors from the weighted regression are adjusted by the mean root design effect (DEFT) of the sample. The following DEFT for each sample was used to adjust the standard errors

| | All Students | Black | Hispanic | White |
|---|---|---|---|---|
| Eighth Graders in 1990 | 1.912 | 1.867 | 1.591 | 1.729 |
| Sophomores in 1992 | 1.888 | 1.693 | 1.671 | 1.713 |

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**Table 1**
**Percent of Dropouts With and Without Access to Counseling -- Eighth Grade 1988-1990; Sophomores 1990-1992**

| | 1988-1990 | | | | 1990-1992 | | | |
|---|---|---|---|---|---|---|---|---|
| | All | Black | Hispanic | White | All | Black | Hispanic | White |
| Percent Who Dropout | 6.0 | 10.0 | 9.0 | 5.0 | 10.0 | 13.0 | 16.0 | 9.0 |
| Percent With Access to Counseling | 35.5 | 36.8 | 36.9 | 35.7 | 7.8 | 4.3 | 3.2 | 4.2 |
| Percent Who Dropout With Access to Counseling | 5.4 | 13.2 | 9.2 | 3.7 | 5.1 | 9.5 | 15.9 | 4.7 |
| Percent Who Dropout Without Access to Counseling | 5.2 | 7.4 | 8.6 | 4.1 | 6.2 | 12.7 | 14.5 | 7.9 |

**Table 2**
**Characteristics of Students with Access to Counseling, By Race**
**Eighth Graders 1988-1990; Sophomores 1990-1992**

| | 1988-1990 | | | | 1990-1992 | | | |
|---|---|---|---|---|---|---|---|---|
| | All Students | Black | Hispanic | White | All Students | Black | Hispanic | White |
| Family Structure | | | | | | | | |
| Single Parent | 0.06** | 0.03 | -0.03 | 0.08* | -0.08 | -0.16 | 0.21 | -0.09 |
| Stepparent Family | -0.02 | -0.06 | 0.05 | -0.02 | -0.01 | 0.10 | 0.22 | -0.06 |
| Other Family Type | 0.07 | 0.16 | -0.07 | 0.04 | 0.29** | 0.46* | 0.62* | 0.06 |
| Low Parental Expectation | -0.02 | -0.09 | 0.02 | -0.04 | -0.09 | 0.02 | 0.21 | -0.18* |
| School Behavior and Attitudes | | | | | | | | |
| Low Student Expectation | -0.04 | 0.16 | 0.03 | -0.06 | -0.09 | -0.08 | -0.01 | -0.10 |
| Held Back A Grade | -0.02 | -0.12 | -0.08 | 0.01 | -0.02 | -0.07 | 0.08 | -0.07 |
| High Incidence of Cutting/Skipping Class | -0.19** | 0.01 | -0.15 | -0.25** | -0.07 | -0.40 | -0.18 | -0.09 |
| Grades | -0.08** | 0.02 | 0.09* | -0.12** | 0.07** | -0.09 | -0.05 | 0.09** |
| Test Scores in Reading and Math | 0.07** | 0.09* | 0.02 | 0.09** | 0.08** | 0.08 | 0.15* | 0.06** |

Other control variables include gender, socioeconomic status, locus of control, self-concept, number of siblings at home, whether another language is spoken in the home.
* Significant at 0.05
** Significant at 0.01.

**Table 3**
**Probit Coefficients For Dropping Out**
**Eighth Graders 1988-1990, and Sophomores 1990-1992**

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | 1988-1990 | 1990-1992 | 1988-1990 | 1990-1992 |
| Family Structure | | | | |
| Single Parent Family | -0.31** | -0.16** | -0.27** | -0.17** |
| Stepparent Family | -0.29** | -0.30** | -0.27** | -0.30** |
| Other Family Type | -0.42** | -0.43** | -0.37** | -0.45** |
| Low Parental Expectation | -0.33** | -0.14** | -0.33** | -0.14** |
| School Behavior and Attitudes | | | | |
| Low Student Expectation | -0.27** | -0.39** | -0.30** | -0.39** |
| Held Back A Grade | -0.66** | -0.46** | -0.67** | -0.44** |
| High Incidence of Cutting/Skipping Class | -0.48** | -0.51** | -0.49** | -0.50** |
| Access to Counseling | | | -0.01 | 0.20* |

Other control variables include gender, race, socioeconomic status, grades, composite test scores in reading and math, locus of control, self-concept, number of siblings at home, whether another language is spoken in the home.
* Significant at 0.05
** Significant at 0.01.

**Table 4**
**Probit Coefficients for Dropping Out By Race -- Eighth Graders 1988-1990**

| | Black | | Hispanic | | White | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| Family Structure | | | | | | |
| Single Parent Family | -0.50** | -0.61** | -0.32** | -0.23** | -0.27** | -0.18** |
| Stepparent Family | -0.56** | -0.67** | -0.17 | -0.14 | -0.29** | -0.25** |
| Other Family Type | -0.69** | -0.76** | -0.29 | -0.41 | -0.30* | -0.18 |
| Low Parental Expectation | -0.69** | -0.76** | -0.23** | -0.19 | -0.25** | -0.25** |
| School Behavior and Attitudes | | | | | | |
| Low Student Expectation | -0.08 | -0.1 | -0.39** | -0.34** | -0.24** | -0.30** |
| Held Back A Grade | -0.42** | -0.46** | -0.65** | -0.65** | -0.73** | -0.75** |
| High Incidence of Cutting/Skipping Class | -0.11 | 0.21 | -0.40* | -0.39 | -0.62** | -0.65** |
| Access to Counseling | | -0.04 | | 0.06 | | 0.002 |

Other control variables include gender, race, socioeconomic status, grades, composite test scores in reading and math, locus of control, self-concept, number of siblings at home, whether another language is spoken in the home.
* Significant at 0.05
** Significant at 0.01.

**Table 5**
**Probit Coefficients for Dropping Out, By Race -- Sophomores 1990-1992**

| | Black | | Hispanic | | White | |
|---|---|---|---|---|---|---|
| | Model 1 | Model 2 | Model 1 | Model 2 | Model 1 | Model 2 |
| Family Structure | | | | | | |
| Single Parent Family | 0.04 | 0.04 | 0.08 | 0.06 | -0.23** | -0.24** |
| Stepparent Family | -0.46** | -0.47** | 0.07 | 0.06 | -0.34** | -0.34** |
| Other Family Type | -0.50* | -0.48** | -0.05 | -0.10 | -0.49** | -0.49** |
| Low Parental Expectation | 0.11 | 0.07 | -0.11 | -0.08 | -0.15** | 0.16** |
| School Behavior and Attitudes | | | | | | |
| Low Student Expectation | -0.26 | -0.23 | -0.40** | -0.41** | -0.42** | -0.41** |
| Held Back A Grade | -0.63** | -0.61** | -0.34** | -0.34** | -0.45** | -0.44** |
| High Incidence of Cutting/Skipping Class | -0.48** | -0.50** | -0.40** | -0.39** | -0.52** | -0.51** |
| Access to Counseling | | -0.33 | | 0.23 | | 0.32* |

Other control variables include gender, race, socioeconomic status, grades, composite test scores in reading and math, locus of control, self-concept, number of siblings at home, whether another language is spoken in the home.
* Significant at 0.05
** Significant at 0.01.

**Table 6**
**Probit Coefficients For Dropping Out - Eighth Graders 1988-1990 and 1988-1992**

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| | 1988-1990 | 1988-1992 | 1988-1990 | 1988-1992 |
| Family Structure | | | | |
| Single Parent Family | -0.31** | -0.27** | -0.27** | -0.25** |
| Stepparent Family | -0.29** | -0.34** | -0.27** | -0.32** |
| Other Family Type | -0.42** | -0.49** | -0.37** | -0.46** |
| Low Parental Expectation | -0.33** | -0.22** | -0.33** | -0.22** |
| School Behavior and Attitudes | | | | |
| Low Student Expectation | -0.27** | -0.31** | -0.30** | -0.32** |
| Held Back A Grade | -0.66** | -0.50** | -0.67** | -0.45** |
| High Incidence of Cutting/Skipping Class | -0.48** | -0.48** | -0.49** | -0.48** |
| Access to Counseling | | | -0.01 | 0.08** |

Other control variables include gender, race, socioeconomic status, grades, composite test scores in reading and math, locus of control, self-concept, number of siblings at home, whether another language is spoken in the home.
* Significant at 0.05
** Significant at 0.01.

**Appendix A**
**Weighted Mean and Standard Deviation**

| | 1988-1990 | | | | 1990-1992 | | | |
|---|---|---|---|---|---|---|---|---|
| | All | Black | Hispanic | White | All | Black | Hispanic | White |
| Demographics | | | | | | | | |
| Female | 0.50 | 0.51 | 0.52 | 0.50 | 0.50 | 0.50 | 0.51 | 0.50 |
| | (0.50) | (0.50) | (0.50) | (0.50) | (0.50) | (0.50) | (0.50) | (0.50) |
| Asian | 0.03 | | | | 0.04 | | | |
| | (0.24) | | | | (0.25) | | | |
| Black | 0.13 | | | | 0.13 | | | |
| | (0.30) | | | | (0.30) | | | |
| Hispanic | 0.10 | | | | 0.11 | | | |
| | (0.33) | | | | (0.33) | | | |
| American Indian | 0.01 | | | | 0.01 | | | |
| | (0.10) | | | | (0.10) | | | |
| Family Background | | | | | | | | |
| Single Parent | 0.18 | 0.37 | 0.17 | 0.15 | 0.18 | 0.36 | 0.19 | 0.15 |
| | (0.38) | (0.48) | (0.38) | (0.35) | (0.37) | (0.48) | (0.39) | (0.35) |
| Stepparent | 0.15 | 0.15 | 0.12 | 0.15 | 0.15 | 0.18 | 0.12 | 0.16 |
| | (0.32) | (0.34) | (0.32) | (0.33) | (0.34) | (0.37) | (0.32) | (0.35) |
| Other Family | 0.03 | 0.11 | 0.04 | 0.02 | 0.03 | 0.07 | 0.04 | 0.02 |
| | (0.16) | (0.27) | (0.18) | (0.12) | (0.15) | (0.25) | (0.16) | (0.12) |
| Sibling Living at Home | 2.31 | 2.72 | 2.88 | 2.15 | 1.49 | 1.61 | 2.12 | 1.36 |
| | (1.58) | (1.82) | (1.72) | (1.47) | (1.31) | (1.49) | (1.55) | (1.17) |
| Socioeconomic Status | -0.11 | -0.44 | -0.61 | 0.03 | 0.00 | -0.36 | -0.53 | 0.13 |
| | (0.80) | (0.78) | (0.76) | (0.74) | (0.81) | (0.79) | (0.78) | (0.75) |
| Low Parental Expectation | 0.19 | 0.23 | 0.26 | 0.16 | 0.13 | 0.14 | 0.16 | 0.13 |
| | (0.38) | (0.41) | (0.44) | (0.36) | (0.32) | (0.33) | (0.36) | (0.32) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Speaks Other Language Besides English | 0.18 (0.41) | 0.07 (0.27) | 0.81 (0.39) | 0.07 (0.27) | 0.18 (0.41) | 0.08 (0.27) | 0.82 (0.39) | 0.07 (0.26) |
| School Behavior and Attitudes | | | | | | | | |
| Ever Held Back a Grade | 0.19 (0.37) | 0.29 (0.45) | 0.21 (0.41) | 0.17 (0.36) | 0.15 (0.34) | 0.24 (0.41) | 0.18 (0.39) | 0.13 (0.32) |
| High Incidence of Cutting/Skipping Classes | 0.02 (0.14) | 0.04 (0.15) | 0.04 (0.16) | 0.02 (0.13) | 0.15 (0.35) | 0.14 (0.34) | 0.24 (0.42) | 0.14 (0.34) |
| Low Student Expectation | 0.12 (0.31) | 0.11 (0.30) | 0.16 (0.37) | 0.11 (0.30) | 0.10 (0.29) | 0.11 (0.32) | 0.15 (0.34) | 0.09 (0.28) |
| Self-Reported Grades | 2.89 (0.74) | 2.72 (0.71) | 2.75 (0.71) | 2.93 (0.74) | 2.82 (0.74) | 2.7 (0.71) | 2.64 (0.75) | 2.86 (0.73) |
| Composite Scores in Reading and Math | 5.04 (1.03) | 4.45 (0.84) | 4.58 (0.84) | 5.22 (1.01) | 5.08 (1.00) | 4.48 (0.89) | 4.61 (0.88) | 5.25 (0.97) |
| Locus of Control | 0.01 (0.61) | -0.07 (0.61) | -0.13 (0.64) | 0.05 (0.60) | 0.02 (0.63) | 0.00 (0.67) | -0.03 (0.66) | 0.04 (0.62) |
| Self-Concept | 0.01 (0.65) | 0.18 (0.62) | -0.07 (0.65) | -0.01 (0.65) | 0.01 (0.68) | 0.24 (0.67) | 0.00 (0.69) | -0.02 (0.68) |
| Access to Counseling | 0.35 (0.48) | 0.37 (0.48) | 0.37 (0.48) | 0.36 (0.48) | 0.04 (0.20) | 0.04 (0.21) | 0.03 (0.20) | 0.04 (0.20) |
| Dropout | 6.0 (0.20) | 10.0 (0.24) | 9.0 (0.27) | 5.0 (0.19) | 10.0 (0.26) | 13.0 (0.31) | 16.0 (0.32) | 9.0 (0.24) |
| Sample Size | 17,424 | 1,748 | 2,143 | 12,147 | 16,749 | 1,606 | 2,043 | 11,717 |